

RFP #

# STATEMENT OF WORK

## Title: 4.6 M Mobile Ku Repair

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### Program Office



National Aeronautics and Space Administration  
Dryden Flight Research Center  
Edwards, California

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**1.0 Background**

The Global Hawk aircraft was deployed to the Island of Guam earlier this year in support of the ATTREX science campaign. While deployed, the project experienced monsoon rains that penetrated and thus disabled the azimuth drive of the Ku mobile system. The Ku system was able to support the remaining flights as it did not need to reacquire a different satellite.

Personnel had to physically secure the system that otherwise would have been automated to ship back to NASA Armstrong.

The Global Hawk project is returning the 4.6 M Ku system to the developer (ND Satcom), requesting the system be evaluated, and compile a list of parts/labor needed to repair the system.

**2.0 Objectives**

The objective is to restore the mobile 4.6 meter Ku satellite system to its original specifications as initially delivered on 6 April 2012.

### 3.0 Requirements

The contractor shall remove /replace the AZ (Azimuth) CW (Clockwise) Box.

The contractor shall remove /replace the trailer lock down clamps.

The contractor shall remove /replace the landing pads.

The contractor shall remove /replace the Outrigger spring latch.

The contractor shall remove /replace the Wing clamps.

The contractor shall remove /replace the azimuth resolver.

The contractor shall remove /replace the reflector lock down clamps.

The contractor shall remove /replace the azimuth chains covers and chain.

The contractor shall wash and degrease the positioner, trailer, and reflector.

The contractor shall inspect and clean all ODU's, (Outdoor Units) and all controller connectors.

The contractor shall grease and lube the jackscrew and azimuth drive chain.

The contractor shall return the trailer, where necessary, to the original paint specifications.

The contractor shall return the reflector, where necessary, to the original paint specifications.

The contractor shall cold galvanize any galvanized hardware necessary to eliminate corrosion and pitting.

The contractor shall perform G/T (Gain / Temperature).

The contractor shall perform RX (Receive) Patterns.

The contractor shall perform RX Cross POL (Polarization).

The contractor shall validate pointing angles on two satellite designations of the Governments choice.

TABLE 1

REQUIREMENTS	A	I	D	T
Trailer Outrigger spring latch		x	x	
Wing Clamps		x	x	
Azimuth Resolver		x	x	
Azimuth CW ODU		x	x	
Light bar Cap		x		
Landing Pads		x	x	
Trailer lock down clamps		x	x	
Reflector lock down clamps		x	x	
Wash and degrease 4.6m system		x		
Chain Grease and Lube		x		
Jackscrew Grease and Lube		x		
Butterfly kit		x		
Azimuth chain		x	x	
Trailer touch up paint		x		
Cold Galvanized		x		
Low Elevation Jack Shaft Adapter		x	x	
Reflector touch up paint		x		
Perform G/T				x
Perform receive patterns				x

Analysis-A

Inspection-I

Demonstration-D

Test-T

**Responsibility for Verification**

Unless specified otherwise, NASA is responsible to inspect workmanship and fit, and review and approve all performance parameters.

Safety & Quality involvement is not required, as this is not a flight critical item.

**Responsibility for Compliance**

The inspections set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the procuring activity for acceptance comply with all requirements of the contract.

**Test Equipment and Facilities**

Calibration of all measuring and inspection equipment, which control the accuracy of test equipment and facilities, shall be traceable to the National Institute of Standards and Technology. The contractor shall ensure that test facilities of sufficient quality and quantity are established and maintained to permit performance of required inspections.

**Methods of verification**

The requirements defined above shall be verified by the method(s) indicated in Table 1.

**Analysis**

The disciplines and processes involving the evaluation, comparison, and correlation of data generated mathematically with the applicable design requirements, or the application of test and/or statistical data to mathematical analyses for comparison with the applicable design requirements. Requirements being verified by analysis shall, in whole or part, be verified by the results of analyses that are of sufficient scope, depth, and level of detail to assure the accuracy of the conclusions reached. This analysis is subject to approval by the Global Hawk and NASA team. Where applicable, the results of analytical tasks performed during the engineering test and evaluation phase and/or the pre-qualification phase of the development program may be utilized. In addition, data obtained from the evaluation of a similar item may be utilized, provided the work was accomplished on a configuration sufficiently representative of the final design.

**Examination of product (Inspection)**

Inspection is the verification of requirements by visual examination of the physical features of a non-operating unit, physical measurements of the unit, and/or comparison of the unit with applicable drawings and specifications.

**Demonstration**

A demonstration consists of a method by which characteristics of the unit are observed, without the use of quantitative measurement equipment, in order to evaluate empirically the adequacy with which the unit conforms to specified requirements. Requirements identified in Table 1 as verified by demonstration shall, be verified by the results of demonstrations that are of sufficient scope, depth, and level of detail to assure the accuracy of the conclusions reached. This demonstration is subject to approval by the Global Hawk and NASA team. Demonstrations may require additional test equipment.

**Tests**

A test consists of a structured procedure to determine the adequacy of the action/operation of the unit under conditions that require quantitative measurement of the unit, its performance characteristics, and/or its environment.

**Functional tests**

Functional tests shall be of sufficient scope and accuracy to ensure that the unit has complied with the requirements as specified in Table 1 unless otherwise specified herein; specific functional tests and conditions shall be defined by a test plan that will be subject to approval by the Global Hawk and NASA team. The functional tests shall be conducted at nominal voltage unless otherwise specified herein.

**4.0 Deliverables**

Contractor's documentation format is acceptable to the Government.  
Contractor shall provide the latest equipment documentation revisions.  
Contractor shall provide all test results to the Government

**5.0 Period of Performance**

10/6/2014 - 11/19/201

**6.0 Travel**

No travel by the contractor shall be required.

All work shall be performed at the Contractors facility.

**7.0 Other Special Requirements and Considerations**

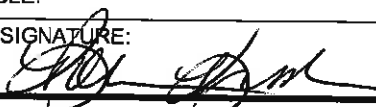
The Government will be responsible for shipping.

**REVISIONS**

<b>Revision Number</b>	<b>Date</b>	<b>Brief Summary of Changes</b>
Base		
1		
2		
3		
4		
5		
6		
7		
8		

# Recommendation and Basis To Solicit From One Source

**All purchases over \$25,000 will be posted publicly for 15 days before award can be made**

1. PURCHASE REQUISITION (PR) NUMBER: 4200529663		2. ESTIMATED AMOUNT (Over \$10,000 but not to exceed \$150,000): \$39,300	
3. RECOMMENDED VENDOR: ND Satcom			
4. BRIEF DESCRIPTION OF SUPPLIES OR SERVICES AND THE INTENDED USE. INCLUDE THE ESTIMATED PERIOD OF PERFORMANCE OR LEAD TIME FOR DELIVERY.  ND Satcom will evaluate the services needed and compile a list of parts/labor needed to repair the 4.6 M Ku band trailered system in support of Global Hawk science campaigns.  The period of performance would be two months			
5. DESCRIBE THE ACTIONS USED TO IDENTIFY SUPPLIES/SERVICES AND VENDORS THAT MEET YOUR NEEDS (Market Research). WHAT SOURCES WERE USED IN YOUR RESEARCH (e.g., Other federal agencies, contacts with industry experts or trade associations, Internet searches, catalogs/brochures, technical/scientific journals, etc.). IF THE SAME SUPPLIES/SERVICES HAD BEEN PURCHASED WITHIN THE LAST THREE YEARS, IDENTIFY EACH PURCHASE MADE AND DATE.  ND Satcom meets the Governments requirements as its the developer and integrator of the 4.6 M Ku system.			
6. REASON(S) THAT RECOMMENDED VENDOR IS THE ONLY SOURCE THAT CAN PROVIDE THE SUPPLIES OR SERVICES. THE RATIONALE SHALL DESCRIBE ANY OF THE UNIQUE CHARACTERISTICS OF THE SUPPLIES/SERVICES THAT LIMIT AVAILABILITY TO ONLY ONE SOURCE.  The two 4.6 Meter Ku Satellite communications Ground Terminals were procured through open and fair competition and were designed specifically to meet the NASA Global Hawk Science , Data and Communications requirements and are unique. The Vendor holds the proprietary rights to hardware and software including integration, therefore another vendor would be unable to make the repairs. Global Hawk operations scheduled for this fall and early next year will be impacted if the system is not repaired and returned in time to meet the mission support requirements.			
7. EXPLAIN THE IMPACT TO THE GOVERNMENT IF OTHER VENDORS WERE USED (e.g., what other products or vendors lacked; vendor's past performance, quality, and/or past experience with prices, etc.). QUANTIFY THE POTENTIAL IMPACT IN ESTIMATED DOLLARS OR TIME IF POSSIBLE.  Procuring any alternates would require substantial software development, subsequent integration, validation, and verification.			
8. PROVIDE A STATEMENT OF ACTIONS, IF ANY, THE GOVERNMENT MAY TAKE TO REMOVE OR OVERCOME ANY BARRIERS TO COMPETITION BEFORE FUTURE ACQUISITIONS ARE REQUIRED (see FAR 6.303-2(a)(11)).  The Government will continue to perform market research to locate other vendors, capable of satisfying this requirement.			
9. I RECOMMEND THAT THE NASA DRYDEN FLIGHT RESEARCH CENTER SOLICIT FROM THE SUGGESTED VENDOR. THIS RECOMMENDATION IS MADE PURSUANT TO FAR 13.106-1, FOR THE ACQUISITION OF SUPPLIES OR SERVICES DETERMINED TO BE REASONABLY AVAILABLE FROM ONLY ONE SOURCE.			
NAME OF REQUISITIONER: BART RUSNAK (8/4/2014)		PHONE: 3265	MAIL STOP: 3302
10. I HEREBY ACCEPT THE ABOVE STATED RECOMMENDATION AND DETERMINE THAT THE CIRCUMSTANCES OF THE CONTRACT ACTION DEEM ONLY ONE SOURCE REASONABLY AVAILABLE.			
NAME OF CONTRACTING OFFICER: Robbin Kessler		SIGNATURE: 	DATE: 9/23/14